



ONTARIO POWER AUTHORITY

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Update of Renewable Resource and Related Transmission Developments in Northwestern ON

**Presentation at the 2010 Northwestern Ontario Regional Conference
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Presentation Outline

- Update of renewable resource development, including the Feed-In Tariff (FIT) Program
- Reinforcement of the electricity supply to the Northwest
- Reinforcement of electricity supply within the Northwest, including the Pickle Lake area

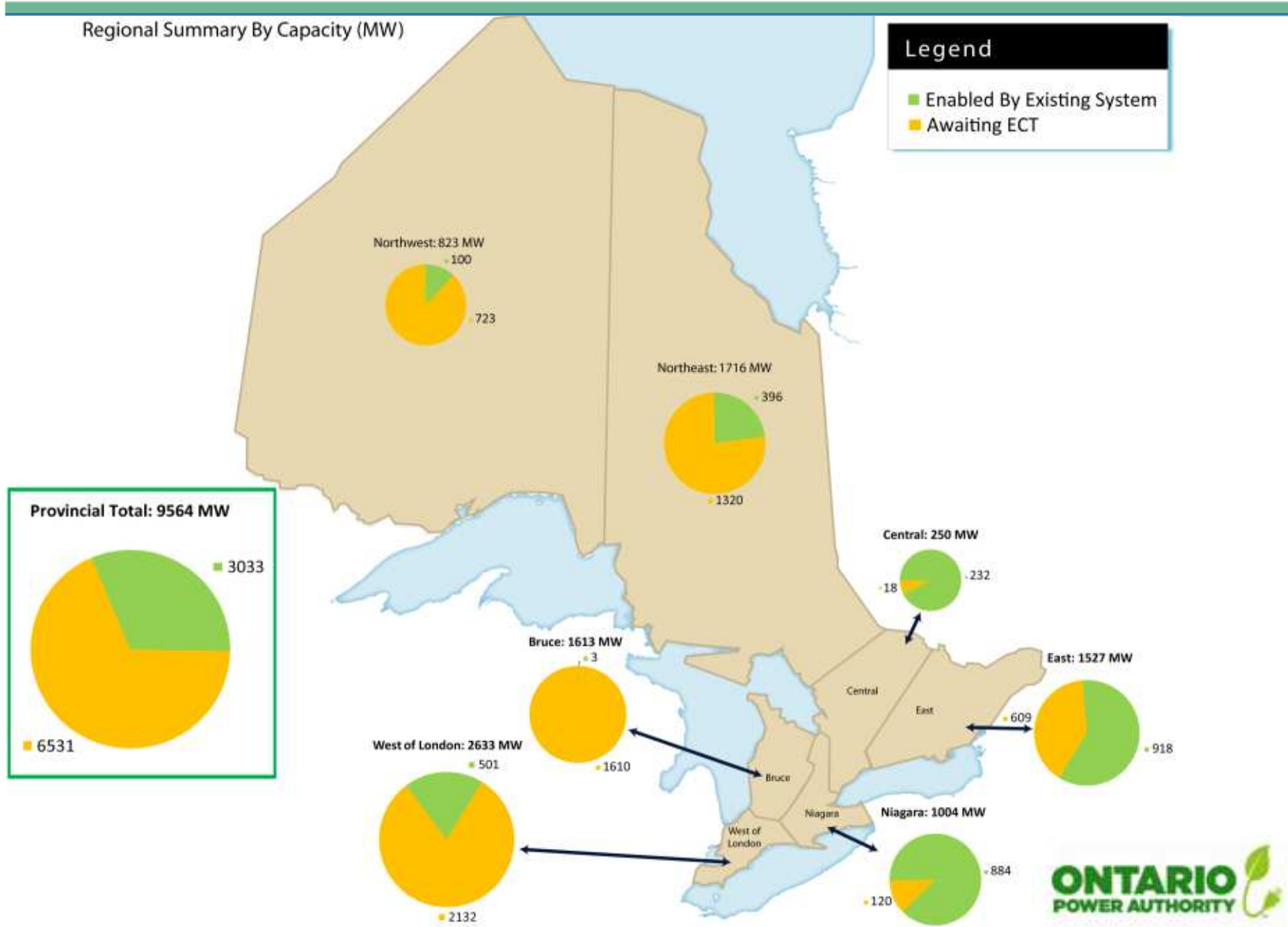
Update of Renewable Resource Development in Ontario

- Electricity Sector Initiatives:
 - Use electricity efficiently
 - Phase out coal-fired generation
 - Increase the contribution of renewable resources
- In the Northwest:
 - Over 50 MW of Demand Response have been procured as part of the conservation program
 - Coal-fired generation will be phased out at Atikokan and Thunder Bay generating stations by the end of 2014
 - About 45 MW of new hydroelectric supply has come into service since 2005 (Umbata Falls, Lac Seul and existing generating station upgrades)

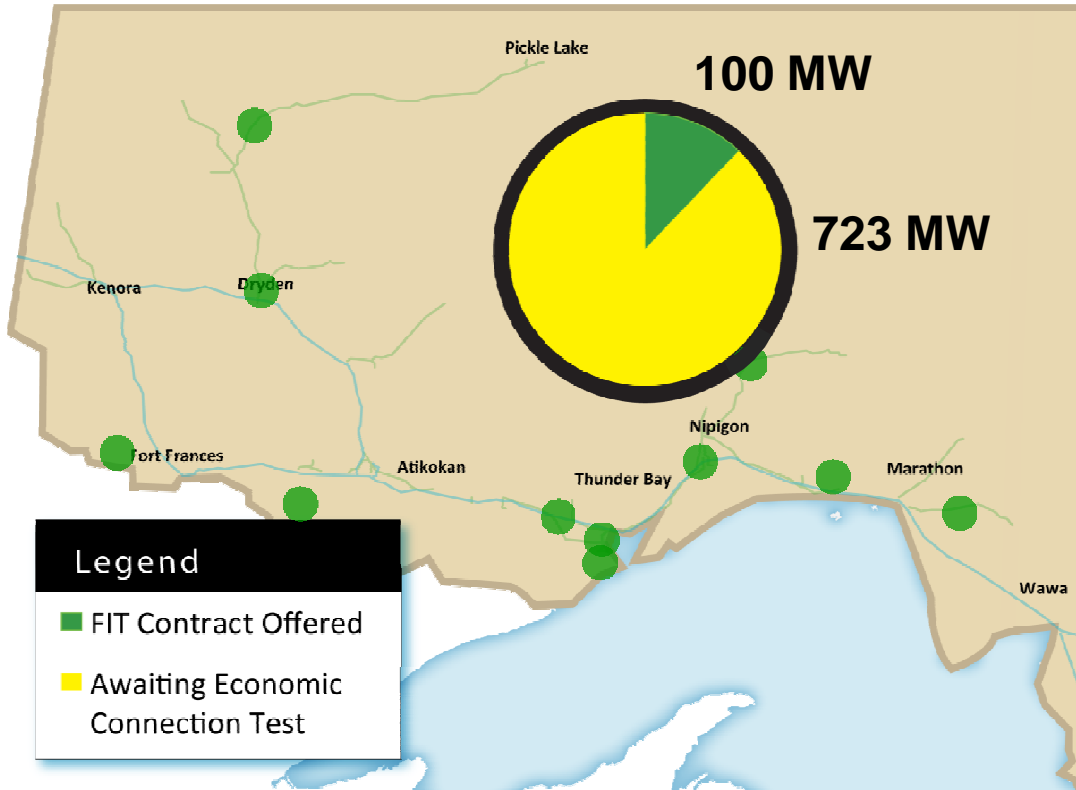
The FIT Program in Ontario

- The cornerstone of the Green Energy and Economy Act is the FIT Program:
 - a “standard offer” type of procurement for renewable resources; uncapped; self-nominating
 - fixed prices; guaranteed long-term contracts with standard terms and conditions
 - A “right-to-connect” but subject to economic, technical and other requirements
 - The FIT rules and processes have been well stakeholdered and communicated; they are posted on the OPA website
- The FIT Program was launched on October 1, 2009

Map of Launch Period and Korean Consortium Phase 1 Renewables by Region



FIT Launch Period Renewable Generation



	Contract Offer (MW)	Awaiting ECT (MW)
Wind	17	573
Water	42	76
Solar	41	32
Bio	0	42
Total	100	723

Northwest Transmission System



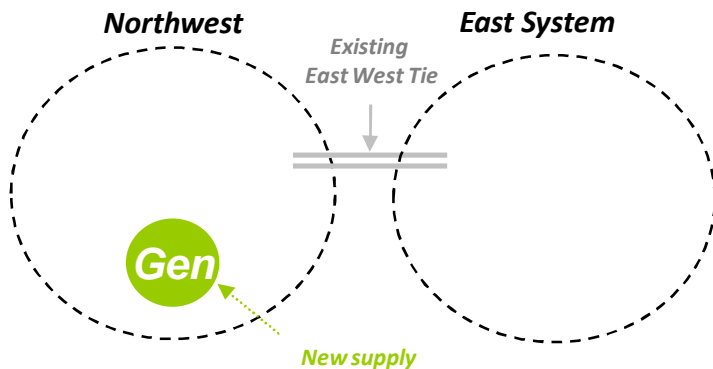
Maintaining Reliability in the Northwest Following Coal Phase Out

- Atikokan and Thunder Bay generating stations are important sources of supply in the Northwest
 - about one-third of the total supply capacity
 - dispatchable supply; voltage support; operational flexibility
- Coal-fired generation will be phased out at these stations by the end of 2014
- OPA is developing plans to maintain reliable supply following the phase out of coal-fired generation and considering factors such as:
 - Recent demand reductions (1,150 MW to 800 MW)
 - Hydro variability
 - Conversion of Atikokan GS to biomass operation
 - Limited transmission capability

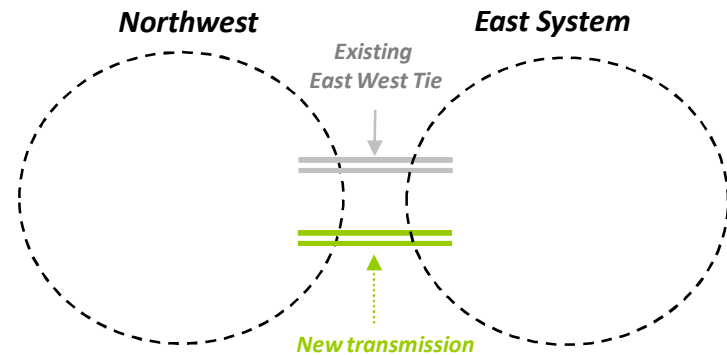
Two Supply Options Being Considered

1. Firm dispatchable generation (e.g. gas-fired) located in the Northwest
2. East-West Tie transmission reinforcement
 - Construction of new 230 kV transmission line from Wawa through Marathon to Lakehead TS in the Thunder Bay area, approximately 400km in length
 - Provides increased transfer capability to supply Northwest from the Northeast

Additional supply located in the Northwest



Transmission reinforcement to the Northwest



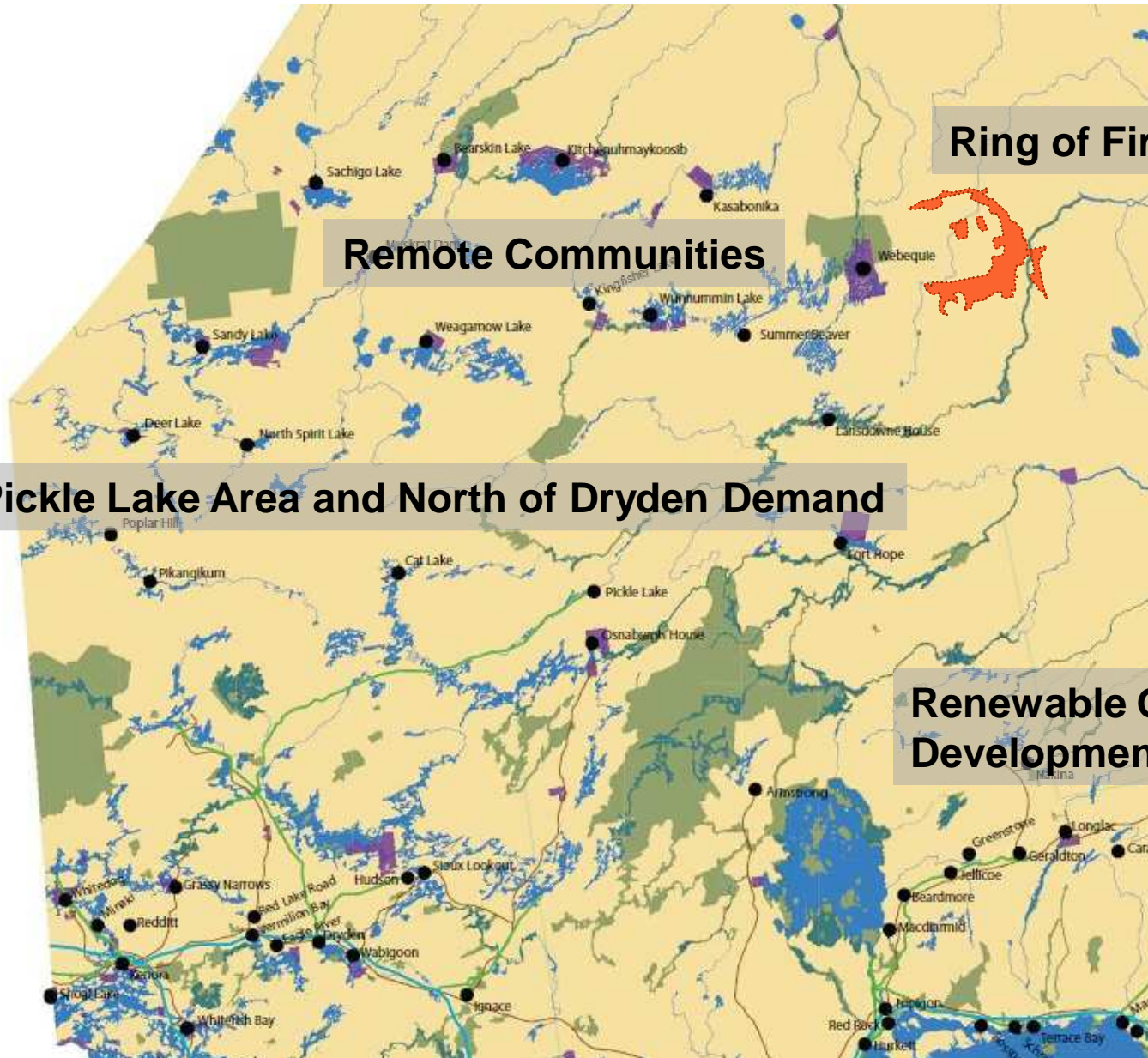
Comparison of the Two Options

- Costs for the two options are similar
- East-West Tie transmission expansion provides a number of additional benefits:
 - Reduces congestion
 - Reduces losses
 - Enables longer term renewable generation
 - Provides greater operational flexibility
- Work continues to evaluate the two options

Regional Developments in the Northwest

- Three regional developments in the Northwest require transmission expansion consideration
 1. Demand growth in the Pickle Lake area and area north of Dryden
 2. Opportunity to connect remote communities
 3. Renewable generation development at Little Jackfish and along the shore of Lake Nipigon
- Additionally, in the longer term, mining development in the Ring of Fire
 - At this time there are uncertainties around the timing and magnitude of this development
 - Options to meet Ring of Fire’s electricity needs will be developed and are not expected to be impacted by near-term transmission initiatives

Supply Within the Northwest



Two Transmission Options to Address Developments in the Northwest

1. “Integrated” Option: Nipigon to Little Jackfish to Pickle Lake
 2. “Independent” Option: Nipigon to Little Jackfish and Ignace (or other termination) to Pickle Lake
- The choice between these two options is impacted by the timing of the developments

Integrated Option



Independent Option

